Index, Technical Section, Paper Trade Journal, Vol. 93

July to December, 1931

Prepared by Clarence J. West, Chairman, Committee on Abstracts and Bibliography.

The page numbers in the following index refer to the continuous paging of the Technical Section and have no relation to the paging of the individual numbers of the PAPER TRADE JOURNAL.

References to the abstracts are preceded by the letter A and those to the patents by the letter P. Other entries refer to original articles appearing in the Technical Section; the author entries for these articles are given in capitals. No author entries are given for the abstracted articles or patents.

To Facilitate Reference

In order to facilitate reference to the individual numbers of the PAPER TRADE JOURNAL, the following table is given, showing the pages of the Technical Section appearing in each of the 27 numbers for Volume 93 (July to December, 1931).

No. 1	July	2	1– 12	No. 15	Oct.	8	161–172
No. 2	July	9	13– 24	No. 16	Oct.	15	173–184
No. 3	July	16	25– 36	No. 17	Oct.	22	185–196
No. 4	July	23	37– 48	No. 18	Oct.	29	197–204
No. 5	July	30	49– 52	No. 19	Nov.	5	205–216
No. 6	Aug.	6	53– 64	No. 20	Nov.	12	217–228
No. 7	Aug.	13	65– 76	No. 21	Nov.	19	229–240
No. 8	Aug.	20	77– 88	No. 22	Nov.	26	241–252
No. 9	Aug.	27	89–100	No. 23	Dec.	3	253–264
No. 10	Sept.	3	101–112	No. 24	Dec.	10	265–276
No. 11	Sept.	10	113–124	No. 25	Dec.	7	277–288
No. 12	Sept.	17	125–136	No. 26	Dec.	24	289–300
No. 13	Sept.	24	137–148	No. 27	Dec.	31	301-316
No. 14	Oct.	1	149–160				

A

Acid, determination in paper....A102, A148, A259
Acid absorber, Paulson A168
Acid towers A147
  Wooden A147, A263
Adhesives for coated papers A100
  for gummed papers A100
Aging test, accelerated A175, 187
Air compressor A21
Air conditioning 197
Air preheaters A215
Air pumps A21
Air separator A193
Alabama, natural resources A22
Alcohols, pulp purification with P250
Alkali, determination in paper.....A148, A259
Alkali solubility test, wood A85
Alkaline processes A86, P87
  Hydrogen ion methods 2
  Soap in P87
Alpha cellulose P97
  Definition 42
  Determination 41, A85
  Preparation P87, A175, P176
  Rayon, use for A145
  Sugar cane A85
Alpha pulp, patent review A23
Alum
  Analysis A177
    Hydrogen ion method A102
  Pulp, absorption by, effect of beating.. 222
  Size, mixing with P217
  Sources and uses 152
Aluminum powder, coating of roofing paper P64
Aluminum sulphate
  Density of solutions A177
  Sources and uses 152
Ammonia, digestion of wood with..... P170
Amyl alcohol, beating of pulp in 224
Amyl chloride, beating of pulp in 224
Analysis, electrometric methods..... A101
Arborite A286
Asbestos cement pipes P62
Ash handling A297
Asphalt
  Paper impregnated with P275
  Roofing felt, use in P63
  Waterproofing with P286
Asphalt board P218
Asphalt-clay emulsion, roofing paper, use in P64
Asphalt emulsions A237, A287
Asphalt paper, creping P135
Australian timbers, analyses A145
Automatic stokers A21

B

Bagasse
  Alkaline process for P169
  Analysis A169
  Chlorine process A169
  Digestion of P36, P114
BAIRD, P. K. Research in use requirements of papers 158
Balerno Bank Paper Mills A24
Ball and rod mill P34
Ball bearings A117
Bamboo
  Chlorine process A169
  Disintegrating P250
  Structure A85
Band drier, air-tight..... P118
Barge, pulpwood P218
Bark
  Drying A12
  Fuel value 80
  Refuse, disposal system A12
Barker P33, A74, A75, P75, A196, P213, P260, P299
  Johannson's drum A74
  Knife A74, A117
  Lagus A74
  Thorne A74, A75, A117, A196, P260
  Wood A263
BARKER, ELLIOTT R. Thirty years' progress in the sulphite industry..... 311
Barking, chemical methods A196
Barking drum P114, P117
  See also Barker
Basis weight 163
  Tensile strength, variation of, with.... 162
Bearings
  Anti-friction A21, A215
  Ball A117
  Doll-head P194
  Roller A213
Beaten strength, pulp A37
Beater P99
  Breaker, Endler A251
  Continuous P251
  Voith A263
Beater roll P99
  High speed P251
  Pressure recorder P251
  Rod mill A250
Beater sizing agents, testing of 150
Beating A250
  Hydrogen ion methods 2
  Insulating properties of paper and..... A62
  Pulp, effect on 221
  Sodium silicate, use of A251
  Sulphuric acid, use of, in..... P176
  Water, role of, in 223
Beating engine P176
  Continuous P99
  Cutting element P176
Beating process, strength changes in 19
Beating tester, nomographic chart A250
Beech wood
  Digestion P170
  Swelling characteristics A146
BEECHER, H. W. Burning wood waste. 80
Belt, endless A118
Belt drive
  Conical P114
  Dayton cog A215
Belts A215
Bewoid sizing process A177
BIALKOWSKY, HAROLD. *See* Kress, Otto
Bibliography
  Hydrogen ion methods 4
  Papermaking, 1930 ..... A24
BILLINGTON, P. S., and HRUBESKY, C. E. Volumetric composition of paper.. 68
BILLINGTON, P. S., and KELLER, E. L. Fiber substance density of pulp and paper 71
Bisulphite liquor
  Analysis 289
  Concentrated, use of 315
  See also Sulphite cooking liquor.
Black gum
  Composition 188
  Sulphite process 188
Black liquor
  Acetate recovery from A285
  Alkalinization P170
  Calcinization A170
  Causticizing P170
  Dehydration P171
  Distillation P97, A97
  Evaporation P171
  Furnace for P171
  Lime soda process A170
  Organic matter, precipitation of..... P170
  Oxidation P97
  Soda recovery A170, A171
  Sodium sulphite from P97
  Sulphite process, use in P285
Blandin Paper Co. A218
Bleach liquid
  Chlorine, gaseous, for P100, P177
  Chlorine, liquid, for A99
  Hydrogen ion concentration A99
Bleaching P99, P100
  Celleulose, effect on 7
  Chemical control 211
  Chlorine gas in P177
  Combined process A251
  Continous process P251
  Hydrogen ion methods 2
  Hydrogen peroxide in P177
  Kinetics of A100
  Multiple stage A23, A176, P177
  Oxalic acid in P177
  Pulp, test for 50
  Ray cells, effect on 119
  Sodium manganate in P177
  Sodium peroxide in P177
  Sodium thiosulphate in P99
Bleaching powder
  Slime control with A216
  Stable P100
Bleaching test for pulps A251
BLIEL, C. C. Painting in paper mill.... 245
Blow down losses A136
Blow pit, filling and emptying P33
Board
  Acoustical P287
  Asphalt P218
  Bituminous P52
  Box A286
  Cartridge cases A61
  Chlorinated lime in manufacture of.... P133
  Consumption per capita A310
  Corrugated P62, P136
    Bursting strength A195
    Manufacture P218
  Cutter waste P83
  Drawing P288
  Drying P194
    Developments in 58
    Systems of A101
  Fiber P61, P288
  Heat processing machine P9
  Insulating A61, P63, A239, P264, P273, A286
  Lignite A286
  Machine for P116, P288
  Moisture, determination of A148
  Rubber impregnated P298
  Severing mechanism P9
  Sheet transfer mechanism P287
  Straw P52
  Waste wood for A84
  Water, determination of A148
  Waterproof, permeability test A195
  Waterproofing P52, A239
  Wool content, determination of A276
Board mill
  Steam accumulator in A21
  White water in A215
Board press, extractor P300
Boiler A285
  Amos A12
  Benson A12
  Blow down losses A136
  Draft control A136
  Developments in 53

Efficiency ... A12
High pressure, water supply ... A22
Loffler ... A12
Piedboeuf-Huygens ... A297
Schmidtschen ... A12
Selection, factors in ... 94
Types of ... 96
Boiler control, automatic ... A297
Boiler design ... A297
Developments in ... A11
Boiler feed water, colloids and ... A297
Boiler plant ... A218
Boiler scale ... A12
Solvent ... P12
Boiler waters ... A285
Book papers, durability ... 192
Bottle cap ... P274
Bowater's Mersey Paper Mills ... A24
Box board ... A286
BRAY, M. W., and EASTWOOD, P. R. Sulphite process. III. Effect of digestion temperature on rate of delignification 188
Brazil, raw materials in ... A84
Breaker beater, Endler ... A251
Breaking length, variation with basis weight 162
Breaks, couch ... A34
British Thomson-Houston drive ... A117
British Vegetable Parchment Mills, Ltd... A23
Brobeck system ... 280
Brushing roll ... P287
BUFF, KARL E. *See* Kress, Otto.
Building board
Multiple ... P264
Resinous woods for ... P287
Tests on ... A52
Building material ... P134
Building paper, tests on ... A52
BURKE, THOMAS J. Development of cost standards ... 205
Burner gases, purification ... P97
Bursting pressure, conversion ... A39
Bursting strength tester ... P259
Area, relation of ... A276
Calibration ... 207
Board ... A195
Mullen ... A38
Paper ... A195
Schopper ... A38
Schopper-Dalen ... A196, A276
Standardization ... A38
BURTON, J. O., and RASCH, R. H. Alpha cellulose and copper number of paper ... 41
Butyl alcohol, beating of pulp in ... 224

C

CABLE, DONALD E. Standard method of preparing test sheets ... 291
Cable paper ... A64, P238
Cables, handling materials with ... A297
Calcium hypochlorite for digesting wood.. P168
Calcium oxide, analysis ... 289
Calcium salts in digestion of straw ... P175
Calender ... P310
Drive ... P9
Electric ... A213
Saturating paper in ... P40
Calender rolls ... P12, P196, P308
Chilled iron ... A213
Contact area ... A260
Hydraulic pressure device ... P36
Nip width ... A260
Calender roll weight, chart for ... A308
California, paper industry in ... A24
Calorisator ... 49
Carbon paper ... P62, P64, P288
Marking ... P63
Trade marking ... P218
Cardboard
Corrugated ... P286
Pressing flat of ... P275
Glazing ... P36
Carrier felt ... P196
CARSON, F. T. Control of relative humidity in a small enclosed space ... 199
CARTER, E. C. Paper stiffness tester ... 172
Carton board, one-side-finished ... P52
Carton machine ... P36
Cartridge board ... A61
Casein
Chlorinated, coating material ... P40
Isoelectric point ... A100
Castings, Chromium-nickel ... 143, A310
Cellophane, dielectric strength ... A62
Cellulose
Adsorption capacity, effect of beating.. 222
Bleaching, effect of ... 7
Chemistry, review ... A240
Colloidal state ... A146
Constitution ... 271
Density ... 71
Determination ... A74, A146
Drying with sulphur dioxide ... P101
Fluidity ... A146
Cuprammonium hydroxide ... 6
Relation to other properties ... 6
Fungi, action of ... A84
Gelatinizing ... A24
Hydrated ... A175
Hydration ... 65, 93, 219, A250
Lignin, determination of, in ... A275
Kürschner-Hoffer method ... 247
Nitric acid method ... 247
Optical properties ... A85
Paper, determination in ... A252
Properties and industrial applications.. A146
Pulp, determination in ... 247
Rayon, use for ... A145
Regenerated, products of ... 269
Swelling of ... 219
Swelling power ... 225
Synthetic ... 60
Uses ... 269
Utilization ... A148
Viscosity ... 6, A146
See also Alpha-cellulose
Cellulose acetates ... 270
Cellulose ethers ... 270
Cellulose nitrates ... 270
Cellulose wadding ... P40
Celotex, impregnated ... P63
Cement sack paper ... A286, A299
Centrifugal screen ... P263
Horizontal ... P54
Chains, handling material with ... A297
Charles Walmsley and Co., Ltd ... A23
Chemicals, recovery from digester ... 315
Chemipulp process ... A168
Chestnut pulp, bleaching ... P177
CHIDESTER, G. H. Sulphite papers from swamp black gum ... 103
CHIDESTER, C. H., HRUBESKY, C. E., and McGOVERN, J. N. Reuse of relief and waste liquors in sulphite cooking acid ... 232
Chipper ... P299
Drive ... A260
Chlorates, use in pulping ... P175
Chlorine
Gaseous, for bleach liquor ... A99
Liquid, for bleach liquor ... A99
Slime control, control of ... A74, A216
Test for ... A218
Chlorine gas, use in bleaching ... P177
Chlorine process ... P170
Bagasse ... A169
Spruce ... A169
Chlorolignin, extraction from pulp ... P174
Chromium alloys for suction box ... P9
Chromium-nickel-iron alloys
Corrosion ... A136
Sulphite industry, use in ... 143
Chromium plating ... A12, A24
Cigarette paper ... P40, P73
Elasticity ... A276
Impregnating material ... P63
Manufacture ... P63
CLARK, J. d'A. Bursting strength of paper 207
Clays, American ... A100
Cloth, imitation ... P133
Coal
Bituminous, storage ... A297
Powdered ... A12
Pulverized ... A21, A215
Selection of ... 95
Coated paper ... A73, A264, A273
Drying ... P100
Manufacturing ... P100
Uses ... A275
Coating composition ... P40, P274
Casein, chlorinated ... P40
Protein ... P237
Collodion ... 270
Color
Pulp, determination of ... A37
Specification for ... A195
Color fastness, determination of ... A195
Condenser paper ... P238
Testing ... A135
Tests for ... A195
Consistency of pulp, changes in, determination of ... 125
Consistency control ... P11
Thyle ... A11
Consistency paper tester, Williams ... A259
Consistency regulator ... P76, P263
Containers
Manufacture ... P136, P218
Rubber-impregnated ... P134
Cooking acid, magnesium ... A249
Copper number ... A102, 212
Paper
Determination of ... A252
Copper pipe, uses in paper industry ... 41
Core cap, extensible ... A136
CORFIELD, J. D. *See* Summers, B. S. P309
Corn cobs, board from ... A61
Corn pith, parchment paper from ... P133
Corn starch ... A177
Cornstalks
Fibers from ... P85
Insulation board from ... A61, P63, A237
Lumber from ... A61, P273
Nitric acid, digestion by ... A239
Papermaking material ... A145
Structure ... A145
Corrosion ... A24
Alloy steels ... A136
Sulphite industry ... 143
Corrugated board ... P62, P64
Manufacture ... P218
Reinforced ... P218
Corrugating machine ... P237
Corrugations, production by compressed gases ... P218
Cost standards, development of ... 205
Cotton hull fiber for rayon ... A145
Cotton linters, cellulose from ... P85
Cotton stalks, disintegrating ... P250
Cottonseed hulls, cellulose from ... P85
Couch breaks ... A34
Couch press ... P263
Couch roll, crowing ... A260
Couch roll doctor ... P261
Couch roll jacket ... A260
Couching felt ... P310
Couplings, flexible ... A215
Cover paper, sodium silicate in ... A251
Cranes ... A21
Crepe paper ... P63, A64
Dyeing ... P298
Creping machine, kraft paper ... P118
Cuprammonium process ... 269
Cushioning paper ... P135
Cutter ... P83, P84, P300
Lay boy ... P83, P84
Slitter shaft ... P84
Cutting machine, guide for ... P264
Cylinder, hydraulic ... P310
Cylinder machine ... P262, A309
Flow deflector ... P10
Cylinder mold ... P116
Cells, division into ... P10
Cleaning device ... P10
Mask for ... P309
Cylinder screen ... P34
Suction ... P34

D

Dandy roll ... P36, A300, P300, A308
Ball bearings for ... P262
Cleaner and wiper ... P308
DAVIS, M. N. Opacity measurements ... 181
Decalcomania paper ... P273
Decoloring paper ... P40
Degree of swelling, pulps ... A194
Deinking process ... P85
Circulating cooking tank method ... 137
High-density process ... 154
Low-density process ... 154
Operations in ... 154
Rotary boiler for ... 137
Steam requirements ... 154
Waste paper ... 137, P145, A145
Wastes from ... 142, A216
Delignification rate, digestion temperature and ... 188
Delignification reaction, order of ... 191
Delthirna sizing process ... A251
Delthirna sizing plants ... A251
Dewrance valve ... A38
Dextrin, use in wallboard ... P237
Dextrose, use in parchment paper ... A64
Dielectric strength
Cellophane ... A62
Papers, factors affecting ... A195
Diffusers ... P34
Digester
Blowing ... P33, P75
Boring ... 313
Charging apparatus ... P307
Chemical recovery from ... 315
Circulating apparatus ... P114
Developments in ... 57
Directly heated ... P307
Electromotive force applied in ... P250
Explosion of ... A98, A259
Filling apparatus ... A33, P117, P118
A260, P261, P307
Centrifugal ... P117
Svenson system ... 280
Forced circulation system ... 13
Heat recovery from ... 315
Hydraulic diaphragm valves ... A196
Interior circulation ... P196
Liner for ... A98, A168
Mercury valve ... A259
Morterud system ... A249
Forced circulation in ... 49, A86
Nickel-chromium steel for ... A168
Operating directions ... A263
Perforated bottom ... A33
Pressure regulator ... A196
Recooking in ... 254
Scalding from ... A75
Steam distribution in ... P117
Support ... A33
Top screen ... P307
Washing out ... P214
Digester circulation
Bullard system ... 314
Luke system ... 313
Morterud system ... 48, A86
Digester gases, recovery ... P99
Dilatometer ... 225
Dirt, determination in paper ... A195
Dirt collector ... P300
Doctor ... P9, P116, P261, P309
Doctor blade ... P261, P309
Doctor roll ... P36
DOUGHTY, R. H. Relation of sheet properties and fiber properties. Tensile strength-solid fraction relation ... 15
DOUGHTY, R. H. Variation of ultimate tensile strength with basis weight and related factors ... 162
Drainage time of pulp ... A38
DRESHFIELD, A. C., HAGGERSON, G. R., and HELLER, H. F. Sizing ability and efficiency of beater sizing agents.. 150
Drier
Board, horizontal ... A101
Board, vertical ... A101
Drive ... P10
Moisture regulator ... P193
Non-condensable gases, evacuation of.. 304
Performance, factors in ... A193
Regulator ... P101
Scraper for ... P194
Steam fitting ... P116

Temperature of A193, 303
Drier felt P308
Drier shell, cast iron, heat transfer in.... A101
Drive
Electrical A237, P260
Positive 265
Rockwood A260
Dry plate paper A286
Drying
Board P194
Coated paper P100
Fidalgo system A100
Sizing, effect of A177
Steam, saturated and unsaturated A193
Temperature of A217, 303
Drying cylinder, air separator for A193
Doll head bearing P194
Heat capacity A193
Durability of paper 88
Duster P213
Dyes A100, P100, A176
Classes of A100
Paper A252
Pulp, absorption by ,effect of beating.. 222
Dyeing, hydrogen ion methods 3

E

EASTWOOD, P. R. *See* Bray, M. W.; Ritter, G. J.
Ebonite A288
Education
Paper industry 140
Vocational 90
Electric cable P238
Electric drive A237, P260
Sectional P260
Electrical industry, use of paper in.... A62, A136, A176
Electrical power
Applications A215
Generating or buying A114
Electric trucks A22
Electromotive force, use in pulping P250
Ely Paper Mills, Cardiff A24
Embossing roll P287
Emulsions
Asphalt A237, A287
Asphalt-clay P64
Waterproofing P135
Equipment, hard facing A23
Esparto
Digestion A169
Preparation A134
Tow, preparation A169
ESSELEN, G. J. Research and development in paper and pulp industry 59
Ethyl alcohol, preparation from sulphite waste liquor A98
Ethylene glycol, beating of pulp in.... 226
Eucalypt woods, analysis A145
Evaporator P83, P117, P214, A215
Heating P83
Liquid regulator P83
Multiple P83
Salt solution P83
Steam, use of P83
Explosion process P175

F

Fagus silvatica, chemical composition **A239**
Fat, determination in pulp A102
Feed water
Automatic regulation A136
Heating systems A136
Felt, Carrier P196
Felt band P34
Felt conditioner P308
Felt guide A263
Felting device, rotary agitator as.... P308
Felts A34
Automatic adjusting of P34
Care and upkeep A308
Conditioner P9
Drier P194
Life of A113
Manufacture A35
Regulating device P34, P35
Regulator P115
Saturating P274
Tension, calculation of A213
Use and abuse A213
Water-laid P238
Fiber
Separation of long P115
Single,
Elongation, determination of A37
Strength, testing of A37
Fiber board P61, P288
Composite P274
Felted P134
Grainless P134
Mason pulp for P134
Pressed P133
Uniform thickness P274
Fiber conduit A216, P264, P274
Furnish for P298
Joining P287
Fiber properties, relation to sheet properties 162
Fiber structure 88
Fiber substance density A285
Fibers
Differentiation A148
Electropositive A217
Fibrous Raw Materials Committee, report 87, A259
Fidalgo drying system A100, A252
Filler, wax-retaining P287
Filter
Continuous, fluid pressure discharge . P300
Vacuum A196
Filter paper P40, P134
Reinforced P264
Fine paper mills, technical control A264
Finish, determination of P276
Fir tex A286
Fish process 25, A239
Power consumption 27
Flint pebbles in pebble mill test 178
Floor covering A136
Waterproof P133
Floor material P298
Flow deflector P10
Flue gases
Electrical precipitation A12
Purification A12
Flue heat, reclamation A21
Fluidity, cellulose 6, A146
Foam, cause and prevention A263
Foaming, hydrogen ion methods 3
Folding machine A24
Food container, strawboard for P287
Food covering P133
Forest Products Laboratory, research at .. A24
Formaldehyde, analysis 241
Uses 241
Formamide, beating of pulp in 227
Fourdrinier machine P9, P75, P196, P299
Erkens A309
Removable P9
Removable table P261
Scoring, prevention of P309
Shaking mechanism P10
France, raw materials of A216
Freeman process for pyrites A168
Freeness 65, 92
Definition A250
Freeness chart, correction for A195
Freeness—consistency chart, Schopper-Riegler A37
Freeness tester 66
Canadian, calibration of A37
Development of A194
Schopper-Riegler A194
Williams A259
Fresk chip filler A260, P261
Fritz vertical hydrator A176
Fuel, waste wood as 80
Fuel oil, beating of pulp in 223
Fullnax A249
Fullnerwerke Co. machines A260
Fungi, action on cellulose A84
Furfural, beating pulp in.... 224
Furnaces
Selection factors 94
Wood waste 81

G

GARDING, W. J., and WEBER, O. L. E. 100 percent groundwood for newsprint.. 25
Gas coolers, developments in 311
Gas turbines A11
Gases, non-condensible, evaculation from driers 304
Gasoline
Analysis 242
Corrosion test 242
Distillation 242
Sulphur, determination of 243
Gears, laminated P298
Gelatinization 93
Germany, pulp and paper industry A23
Glazed paper, two toned P64
Glazing cylinder P213
Gloss, determination in paper.... A39
Glycerine
Beating of pulp in 227
Vapor pressure 200
Wood, use in digestion of P170
Glycol lignin, action of hypochlorous acid . A85
Glycolic acid of cellulose, use in sizing ... P217
Grasses
Digestion P170
Papermaking material P85
Grates for furnaces for wood waste 82
Grease resistance of paper A102
GREEN, ARTHUR B. Practical slowness tester 266
GRIFFIN, R. C. Non Fibrous Materials Testing Committee 111
Grinders
Bearings A215
Continuous A86
Drive P86
Electrical feed drive P171
Pocket A86
Speed A171
Steam power for P171
Steam turbine drive A260
Wood feeding chain P86
Grinding stones, artificial A249
Groundwood, evaluation of A252
Groundwood mill A216
Guard Bridge Paper Co., Ltd. A24
Guide rolls, wire P115
Gummed paper P62
Adhesive for P176
Gurley densometer A38

H

HAGGERSON, G. R. *See* Dreshfield, A. C.
Hard paper P52
Hardwoods as papermaking materials A84
HEALY, J. J., Jr. Sulphate of alumina and the alums 152
Heat
Conservation A98
Exchanger A98
Heat and Power Committee, Report 57
HELLER, H. F. *See* Dreshfield, A. C.
Heralith A218
Hess-Ives tintometer, integrating device ... A99
Hochst acid cement A98
Hog fuel A12, 80
Hoists A21
Hollow articles, manufacture P52
HOVEY, R. W., and MERRILL, A. D. Forced circulation system for sulphite process 13
HRUBESKY, C. E. *See* Billington, P. S.; Chidester, G. H.
Humidity
Measurement of 202
Relative, laboratory control of 200
Hydration 92, 219
Boiling method 156
Definition 65, 93, A250
Hydrogen ion methods 2
Nature of 156
Hydrator, Fritz A176
Hydraulic drives A21
Hele Shaw Sat A21
Hydrogen ion concentration, measurement of A99
Hydrogen ion methods 1, A218
Hypochlorites, analysis A175
Hypochlorous acid, action on lignin A85
Hydrogen peroxide, use in bleaching P177

I

Impregnated sheets P285
Institute for plant chemistry and wood investigations A148
Insulating board ..A61, P63, A239, P264, P273, A286
Cornstalks A61, A237
Insulating materials P297
Insulating paper A62, A64, A264, 299
Sizing A217
Insulex A218
International Paper Co., newsprint mill A24
Inventor, sole and joint 161
Iron, removal from paper stock A299
Iron sulphide, roasting P147
See also Pyrites.
IRVING C. C. Deinking wastes 142
IRWIN HARRY J. *See* Kress, Otto.

J

Jack pine
Air treatment 77
Pitch, removal of 77, A239
Resins of 78
Oxidation of 79
JAHN, EDWIN C. Uses of cellulose 269
JEFFREY, S. C. *See* Peterson, F. C.
Jensen-Brobeck system 279
JONTE, L. E. Development of sulphite process 56
Jordan control A176
Jordan plug P116
Jute fiber, composition A240

K

Kaoliang stalk, papermaking material A85
KELLER, E. L. *See* Billington, P. S.
KINKAID, W. H. Positive drives in the paper mill 265
Knife barker, advantages A23
Knotter P33
Knotter plate P118
Kollergang P118
Lubricating P251
Kraft mills, white water in A215
Kraft paper
Creping machine P118
Embossed P239
Kraft pulp
Drying P261
Hydration 67
Recooking, effect of 254
Sodium hydroxide, effect of 254
KRESS, OTTO, and BIALKOWSKY, HAROLD. Hydration 219
KRESS, OTTO, BUFF, K. E., and IRWIN, H. J. Loss in yield and quality of pulp in digesters which were not blown clean 254
KRESS, OTTO, and LAUGHLIN, E. R. Air treatment of jack pine chips to overcome pitch trouble 77

L

Laboratories, industrial, list of A216
Northern Paper Mills A298
Laminated paper, machine for P115
Lampen mill A37
LANDT, G. E. *See* WENNBERG, E. N.
LAUER, B. E. *See* YOUTZ, M. A.
Lauf-Thoma drive A21
LAUGHLIN, E. R. *See* Kress, Otto; Lewis, H. F.
Layboy P118
Cutter P83, P84
Leather, artificial P134

LeCOMPTE, T. R. Hydration measurement by the boiling method 156
Lewellen jordan control A176
LEWIS, HARRY F., and LAUGHLIN, E. R. Estimation of cellulose in pulps .. 247
Light
  Relative visibilities 182
  Rosin, effect on 27
Lignin
  Absorption spectra A86
  Bamboo A146
  Carbon from P98
  Constitution A146
  Determination A85, A146, A275
  Hardwood A86
  Hypochlorous acid, action of A85
  Microstructure A85
  Optical properties A85
  Removal, temperature effect in A249
  Softwood A86
  Spruce
    Climatic conditions, effect of A285
    Constitution A85
  Sulphite acid, reaction with A147
  Sulphite process, behavior in A147
  Sulphurous acid, reaction with A240
  Theories of formation A86
  Ultra-violet absorption A86
  Utilization 60
  Wood, preparation from A146
Ligninsulphonic acid A24
  Utilization P98
Lignite board A286
Lime
  Economics A169
  Manufacture A169
  Recovery A170
Limestone, economics A169
Liners P73
Linoleum substitutes A136
Lithographic paper, research on A216
Loading, hydrogen ion methods 3
Log barker P114, P260
  See also Barker
Lovibond tintometer A37
Lubrication, savings in A297
Lumber, synthetic A61
  Cornstalks A61
LUND, M. H. Morterud's circulation system 49
LUNDBERG, A. H. Sulphite pulping process developments 279
Lurgi acid making system A260

M

McGOVERN, J. N. *See* Chidester, G. H.
McGREGOR, G. H. Bleachability test for pulp 50
McGREGOR, G. H. Hydration of wood cellulose 65
Machines. *See* Paper machine.
Machinery, painting 246
Magnesium oxide, determination of 290
Magnets, iron removal from pulp by A299
Maizewood A286
Maizolith A61
Making board P10
Marbled paper P134
MARTIN, J. V. Rapid determination of pulp consistency changes 125
Masonry, painting 245
Materials of Construction Committee, Report 20
Materials handling A297
MAUGHAN, M. *See* Peterson, F. C.
Mechanical drive A260
Mechanical handling A21, A297
  Pneumatic A215
Mechanical process
  Fish process 25
Mechanical pulp P171
  Color, improving P171
  Consistency changes 125
  Determination of A195
  Evaluation 107
  Fiber length 109
  Fiber size distribution 109
  Physical properties 108
  Temperature on exit from grinder..... A171
  Water, hydrogen ion concentration of, and P171
MERRILL, A. D. *See* Hovey, R. W.
Metal, bonding of rubber to A24
Metal-covered paper P52
Metal paper, inspection P259
Methyl alcohol, beating pulp in 227
Microscope A39, A136
MILHAM, E. G. Steam requirements of deinking process 154
Millboard, waterproofing P133
MILLER, J. D. Materials of Construction activities 20
Minck fiber A145
MINOR, JESSIE E. Chemical testing in mill control 211, A216
MINOR, JESSIE E. Fibrous Raw Materials Committee report..... 87
MINTON, OGDEN. At what temperature should paper be dried? 28
Mixing tank, vertical A76
Moistening device P36
Moisture
  Board, determination in A148
  Paper, determination in A148, 173
  Wood, determination in ..A145, A146, 173
  Xylene volumetric method 173
Morterud's circulation system 49, A86
Motors
  Asynchronous P113
  Multiple drive, speed regulator P113
  Speed of P113
  Synchronous A136
Mulch paper A11, A299
Mullen gauge, calibration 208
Mullen tester A38, 208
  Clamps for P259

N

New Zealand flax, papermaking material.. A145
Newspaper
  Deinking P85
  Strength tests on 26
Newsprint
  Control and tests A134
  Fish process A239
  Furnish for 25
  Printing qualities 159
  Sulphite-free 25
  Top and wire side, distinguishing A250
Newsprint mill
  International Paper Co. A24
  White water in A215
Nickel-chromium-iron alloys in sulphite process 143
Nitrate process 270
Nitric acid
  Cornstalks, digestion of A239
  Wood, digestion of, with A99, P175
Non-Fibrous Materials Testing Committee, Report 111, A252
Northern Paper Mills, laboratories A288
Northfleet Paper Mills A218
NOYES, HAROLD G. Training problems in the pulp and paper industry 140
Nubilose nozzle A169
Nyssa biflora, sulphite process 103
Nyssa sylvatica, sulphite process 188

O

Oil of vitrol, analysis 277
Opacity
  Paper, determination of 181, A259, A276
  Printing 184
Operation recorder, Amthor 296
Oregon, paper industry in A24
Organic acids, sizing agents P177
Orsat apparatus 278
Oswego Board Corporation, mill A288
Overhead rail A260
Oxalic acid in bleaching P177
Oxford Paper Company, boiler plant A288

P

Pacific coast, paper industry on A24
Pacific Mills, Ltd. A24
Paints
  Acid proof A216
  Choice of 246
  Phases of 245
Paper
  Acid, determination of A102, A148, A259
  Adhesives, applying P274
  Ageing tests, accelerated A175
  Air drying P194
  Alkali, determination of A148, A259
  Alpha cellulose, determination of ..41, A252
  Appearance 159
  Asphalt, creping P135
  Asphalt-impregnated P275
  Atmospheric conditions, effect of 197
  Basis sheet properties 158
  Batik effects P73
  Burstig strength A195, 207
    Solid fraction relation 19
  Cable A64, P238, P287
  Calendered, one-side P76
  Calendering P237
  Carbon P62, P64, P218 P288
  Cement sack A286, A299
  Chlorinated lime in manufacture of .. P133
  Cigarette P40, P73
    Elasticity A276
    Impregnated material P63
    Manufacture P63
  Coated A73, A133, A264, A273, P275
    Drying P100
    Manufacture P100
    Uses A275
  Coating composition P40, P274
  Color, determination of A39, A99
    Optical method A259
  Condenser P238
    Testing A135, A195
  Consumption per capita A310
  Contrast ratio 181
  Copper number A252
    Determination of 41
  Corrugated P62, P64
    Manufacture P76
    Winder P84
  Corrugating P237
  Corrugating machine P273
  Cover, sodium silicate in A251
  Crepe P63, A64
    Dyeing P298
  Cushioning P135
  Cutter and winder P118
  Cutter waste P83
  Decalcomania P273
  Deckle edge P2-8
  Decolorizing P10
  Decorated, apparatus for P115
  Decorating P274, P287
  Deinking P85
  Density 72, 159
    Determination of 72
  Design P286
  Destruction by light..... A259
  Dielectric strength.....A62, A195
  Dirt in, determination of..... A195
  Dry plate..... A286
  Drying A101, A218
    Developments 58
  Temperature A217, 303
  Durability ..A62, 88,A148, A259, A288, A310
  Dusting P213
  Dyeing P274
  Dyes for.....A252
  Electrical industry, sues in...A62, A136, A176
  Embossed P73
  Embossing P11, P274
  Etching P286
  Fiber substance density..... A285
  Filler-wax retaining..... P287
  Filter P40, P134
    Reinforced P264
  Finish, determination of..... P276
  Fireproof P297
  Fireproofing P52, P73, P298
  Folding strength-solid fraction relation 19
  Formation A148
  Gelatin-coated P134
  General sheet properties..... 158
  Glazed, two-tones..... P64
  Glazing P36
  Gloss, determination of..... A39
  Glue-sized, drying..... P62
  Gluing P62
  Grease resistance..... A102
  Gummed P62
    Breaker bar for..... P274
    Adhesive for..... P176
  Hand made, imitation..... P73
  Hard P52
  Humidifying by steam box..... P308
  Impregnated P273
  Ink penetration..... A252
  Insulating A62, A64, A264, 299
    Sizing A217
  Insulating properties..... A62
  Laminated, machine for..... P115
    Ornamental P287
  Light reflecting properties..... P238
  Lithographic, research on..... A216
  Marbled P134, P264
  Marbling P298
  Metal-coated P52, P64, P73
  Meter, inspecting..... P259
  Moistening A64, P214
  Moistening device..... P36
  Moisture content on machine
    Control of..... P307
    Determination of..... P102
  Moisture regain after heating..... 187
  Moisture regulator..... P193
  Mottling material for..... P216
  Mulch A11, A299
  Multiply P134
  Multi-colored P239
  Nacreous P40
  Oiler and waxer..... P36
  One-side-finish P36
  Opacity, determination of....181, A259, A276
  Opacity test..... 181
  Ornamental P238
  Ornamenting P274
  Overdrying, effect of..... A217
  Oxidation of atmospheric oxygen..... A175
  Paraffin P40, A64, P64
  Parchment P73
  Permanence A259
  Permeability to air..... A102
  Photographic A286
  Porosity A102
    Density and..... A276
  Pre-impregnation P64
  Preservation of..... 306
  Printer and..... A310
  Printing A286
  Quartz lamp in study of..... A39
  Recording P40
  Reenforced P73
  Reenforcing P298
  Resin-bonded P133
  Resin-impregnated P52, P63
    Dielectric strength..... A62
  Resistance to light..... A259
  Roll pressure, effect of..... A237
  Rosin sized..... P308
    Drying temperature..... 28
  Rotogravure A299
  Rubber and..... P274
  Rubber-containing P238
  Rubber-impregnated P62, P134, P298
  Safety P278
  Saturating P274
  Semi-parchment P64
  Sensitized P62
  Sheathing P135
  Sizing permanence A252
  Sizing with fatty acids..... P134
  Solid fraction.....70, A252
    Definition 15
    Tensile strength and..... A195
    Volume 69
  Sorting, illumination in..... P76

Sorting machine P300
Staining, cause of A218
Standardization A23
Starch-iodide P73
Static electricity in 197
Stiffness tester 172, 229, A276
Strength and basis weight A275
Strength, effect of white water A216
Strength curve 15
Structure 159
Sulphur dioxide, effect of A175
Tearing strength-solid fraction ratio 19
Temperature of drying 28
Tensile strength A275, A276
Comparison of 302
Solid fraction ratio 15, A195
Thickness 159
Threading through machine P116
Tobacco package P133
Toilet P273
Transparent P134, P286, P299
Trimmer P10, P11
Tub-sized, drying 32
Two-sided P115
Uniform thickness P24
Use requirements 158, A310
Vacuum drying 31, A102
Volumetric composition 68, A252
Waste, deinking 137
Water, determination of A148
Watermarking P286, P308
Waterproofed ..P39, P40, P63, P238, A239, P273, P274, P286, P298
Waxed P275
Wax-sized P64
Weight, controlling P102
Whiteness, optical method for determining A259
Wood pulp, determination of A85
Wrapping P287
Paper board, metal-covered P52
Paper coating, thickness gauging P275
Paper cutter, clamp for P309
Paper industry
California A24
Education in 140
Electrical developments A21
Germany A23
History A24
Hydrogen ion methods in 1
Jobs, classification of, in 140
Pacific Coast A24
Research in 59
Steam pressures in 94
Steel in A262
Training problems in 140
Paper machine
Capacity, calculation of A117
Developments A11
Evaluation A117
High-speed A177
Insulating A218
Moisture content of paper, control of P307
Power requirements A299
Shaking mechanism P10
Steam consumption A76
Threading paper through P116
Paper machine drive P116, P117, P213, P215
Constant speed units A22
Differential P214
Electric drive A113
Multiple motor A307
Developments A22
Regulator P22
Regulating P22
Sectional P213, P260, P307
Single motor A22
Variable speed P11
Paper machine wires. *See* Wires.
Paper making
Chemistry of A148
Colloidal chemistry in A148
Evolution of A23
Sea water in P145
Paper making materials 59
Brazil A84
Corn pith P133
Corn stalks P85, A145
Cotton linters A85
Cottonseed hulls P85
Grasses 85
Hardwoods A84
Kaoliang stalks A85
New Zealand flax A145
Nyssa biflora 103
Phorium tenax A145
Pinus strobus 127
Southern pine A148
Sugar cane A85, A145
Swamp black gum 103
White pine 127
Paper mills
Back waters, legal aspects A148
Germany wages in A310
Management A148
Painting in 245
Positive drive in 265
Saxony A148
Steam pressures in A285
Steam temperatures in A285
Paper reel P196
Paper sheets
Bonding P9
Superimposing P263
Paper stock
Consistency regulator P76
High density, storage A76
Iron, removal of, by magnets A299
Mixer P76
Paper testing
Air conditioning in A195, 198
American practice A276
Temperature effects 201
Uniform conditions A195
See also names ot individual tests
Paper Testing Committee, report 139
Paper value, definition A38
Paper web
Carrier P75
Handling P10
Paper winder P84
Goebel A84
Papier mache P52
Waterproofing P133
Paraffin emulsion P63
Paraffin paper P40, A64, P64
Parchment paper P73
Corn pith for P133
Dextrose in A64
Dyeing P64, P133
Imitation P288
Washing P288
PARSONS, JOHN L. Cellulose fluidity in cuprammonium hydroxide 6
Patent attorneys 230
Patent Committee, plans 244
Report 149
Patents
Alpha pulp (review) A23
Application for 89
Employee's rights in 253
Shop rights 253
Signer of 161
United States A24, 53, A148, 185, A218, A288
Pebble mill test
Flint pebbles in 178
Porcelain balls in 178
Pulp, effect on A169
Spruce chlorine pulp, effect on 123
Penetration boosting pressure P98
Penobscot Chemical Fibre Co., mill A288
Pergament paper P64
Pergamyn, dextrose in A64
Permanganate number, pulps A98
Permeability
Boards, determination of, in A195
Paper, to air A102
Peroxides, manufacture P177
PETERSON, F. C., JEFFREY, S. C., and MAUGHAN, M. Flint pebbles and porcelain balls in pebble mill test 178
P. H. Glatfelter Co., Spring Grove plant A24
Phorium tenax, papermaking material A145
Photoelectric cells 182
Opacity, determination of, with A259
Photoelectric tube A24
Phosphorous derivatives, fireproofing with P52
Photographic film P134
Backing paper P298
Photographic paper P40, A286
Photometer A259
Photoelectric 183
Zeiss A39
Pine
Southern, papermaking material A148
Sulphite process, use in A146
Pinus strobus, papermaking material 127
Pipes
Pulp conveying in P214
Stock, friction loss in A215
Water A297
Woodstave A21
Pitch
Removal of 77
Air treatment for A239
Troubles P275
Wood pulp, determination in 301
Plaster board P40, P238
Plasterbase board P61
Poplar pulp, action of caustic solutions A240
Porcelain, wrapping paper for A299
Porcelain balls in pebble mill test 178
Porosity, paper A102
Powell River Company A24
Power
Economy A12
Paper machine, calculation of A299
Power costs, calculating A297
Power plant
Design A297
Location factors A22
Press, hydraulic P76
Press rolls A117, P261, P309
Contact area A260
Crowning A9, A260
Groved P115
Nip width A260
Rubber covered A299
Care of A196
Press roll doctor P261
Vickery A260
Press room
Air conditioning in 197
Humidity in 198
Pressboard, dextrin in P237
Printer, paper and A310
Printing opacity 184
PRIOR, P. H. Rapid laboratory sheet making and testing 281
Promi A136
Pulp
Alkali liquor, washing with P176
Alkaline, purification P176
Alpha tests 212
Aromatic hydrocarbons, treatment with P175
Ash content in pebble mill test 178
Asphalt impregnated P218
Beaten strength A37
Beater processing, effect of 18
Beating A37, A38, 221
Butyl alcohol 224
Fuel oil 223
Beating tester A39
Bituminous P238
Bleachability of A99
Bleachability test 50, A251
Bleaching, combined A251
Boil-off number 212
Cellulose, determination of 247
Chlorine process, pebble mill treatment 123
Chlorolignin, extraction of P174
Color, determination of A37
Consistency, formation strength and 166
Consistency changes, determination of 125
Copper number A102
Degree of swelling A195
Density 71
Determination of 72
Dewatering P194
Drainage time A38
Drying A252
Developments in 58
Electric P261
Fidalgo system A252
Dyes A252
Easy bleaching P174
Electric current, treating with P261
Fat, determination of A102
Felting strength, determination of 291
Fiber length in sulphite process A147
Fiber substance density A285
Fire- and waterproofing P133
Fluorescence A39
Formation strength, consistency and 166
Freeness 66
High alpha-cellulose A175
Hydration A64
Initial strength, determination of 291
Kraft-simulating P168
Lap folding P261
Moisture, determination of 173
Molded P238
Molding machine P36
Pebble mill treatment, effect of 18
Permanganate number A98, 212
Pipes, conveying in P214
Properties A175
Purification P176
Cooking with alkalies P256
Quartz lamp in study of A39
Rate of flow test 110
Ray cells in A239
Processing, effect of 119
Rayon A299
Recooking, effect of 254
Refining, effect of A38
Rosin A288
Determination of A102
Screen analysis 107, A252
Spruce, pebble mill treatment 123
Static bending test 111, A252
Steam cooking process A250
Storage P261
Strength
Ageing, effect of A38
Factors affecting A39
Heating, effect of A38
Strength testing A23, A37, A39, 178
Sulphite, chlorination A176
Swamp black gum 104
Tearing length A275
Tensile strength A275
Time of rotation 125
Time value, definition A38
Unbleached, evaluation A194
Vacuum drying A193, A252
Viscosity tests 212
Wadding P299
Washing P34, A196
Apparatus P114
Countercurrent A196
Hydrogen ion methods 2
Waterproofing P63, P133
Western, bleaching A177
Western and Eastern, comparison A146
Western, woods for A146
White pine 127
Young trees for A239
Pulp bales, preparation of A288
Pulp board, resin coated P61
Pulp dies P76
Pulp evaluation A194
Pulp grinder, load regulator P171
See also Grinders
Pulp industry, Germany A23
Pulp mills, whitewater in A215
Pulp rake A33
Pulp refiner P114
Pulp screen P118
Pulp sheets
Drying apparatus 282
Drying for testing 282
Formation for testing 281
Paper Makers' Association method 281
Physical tests 284
Shrinkage 283

Pulp stones
Artificial A249
Moistening P86
Pulp testing A77
American and British methods A194
Beater method A194
Degree of swelling A194
Mechanical pulp A195
Pebble mill test 178
Pulp value, definition A38
Pulping process P174
Pulping velocity, relation of temperature 189
Pulpwood
Barge for P218
Conveyor P74
Mechanical handling A33
Pacific Coast A195
Piling P74, P83
Pulverized fuel, synthetic 95
Pumps
Stock A215
Stoneware A12
Variable flow A21
Pyrite burner A260
Pyrites
Roasting P97, P147, A168, A249
Freeman process A168
Pyroxylin 270

Q

Quartz lamp A39

R

Rag mixtures, viscosity of 204
Rags
Classification by viscosity measurements 202
Cooking, hydrogen ion methods in 2
Dusting P213
Preparation A134
Treatment of A176
Viscosity of 203
RASCH, R. H. *See* Burton, J. O.
Ray cells
Bleaching, effect of 119
Pebble mill treatment, effect of 123
Pulps A239
Processing, effect of 119
Waste of A169
Rayon
Alpha-cellulose for A145
Cellulose for A145, 272
Cotton hull fiber for A145
Ream weight 163
Reciprocating machine A11
Recording instruments A12, A21
Red birch, composition A239
Reel, drive for P9
Reel stand P118
Refiner P34
Drive for 265
Pulp P114
Wiener A176
Refractories, furnaces for wood waste 82
Relief design P36
Relief gases, recovery P99
Relief liquors, reuse in sulphite process 232
Relief pipes, clogging of 313
Research 59, A216, A288
Research Institute for Wood A23
Resin, synthetic
Paper, bonding with P133
Paper, impregnating with P63
Resins
Jack pine 78
Oxidation of 79
Rewinder P264, P310
Rexman beater roll A250
Rinman process A97
RITTER, G. J., SIMMONDS, F. A., and EASTWOOD, P. R.
Effect of processing on the number of ray cells in pulps and stuffs 119
RITTER, G. J., SIMMONDS, F. A., and SEBORG, R. M.
Pebble mill treatment effect on strength of pulp 123
RIVISE, CHARLES W. Patent attorneys 230
RIVISE, CHARLES W. Report of Patents Committee 149
Rod mill A263
Beater roll A250
Roller bearings P36, A117
Rolls A117
Bearings P36, A117
Care and upkeep A308
Chromium plating A24
Grinding machine A214
Non-driven, mounting P308
Paper, removal of P116
Pressure, effect of, on paper A237
Ridged P115
Rubber, care of A213
Rubber-covered A213
Roofing P39, P133
Built-up P273
Colored A287
Laminated P133
Machine for P83
Manufacture P63
Oil-saturated P133
Prepared P264
Saturating P287
Roofing element
Coating P135
Cutting P287
Edge finishing P135
Roofing felt
Asphalt, impregnating with P40
Cutting machine P135
Impregnating P63
Saturating P134
Roofing material P238
Roofing paper
Aluminum powder, coating with P64
Waterproof P63, P64
Roofing sheet P297
Roofing shingle P238, P273
Rosen process A98
Rosin
Light, effect of 27
Liquid, distrillation P171
Pulp content A288
Pulp, determination in A102
Rosin size A251
Addition substances A251
Analysis A251
Rosin sizing P308
Chemical control 211
Rosin soap P97, P308
Rotogravure paper A299
Rubber
Boards, impregnated with P298
Hard A288
Industrial uses A24
Metals, bonding to A24
Rubber emulsion, sizing with P217
Rubber rolls A118
Rubber-wax composition for waterproofing P133
Rubberized paper P62
RUE, JOHN D. Heat and Power Committee, report 27

S

St. Anne's Board Mill A310
St. Helen Pulp and Paper Co., machines A260
Safety paper P238, P298
Manufacture P63
Salt solutions, relative vapor pressures 200
Sampler, Geary-Jennings 161
Samuel Jones and Co., Ltd. A24
Sand catcher P118
Sand riffler P118
Sand trap P115
SANDWELL, P. Some drier experiments 303
Satin white A64
Save all A24, P35, P214, P300
Adka aerator A35
Dorr P35
Funel-shaped A115
Pedersen A117
Sveen A117
Saw, circular P260
Sawdust
Digestion P169
Microscopy of A86
SCHAFER, E. R., and HEINIG, M. Groundwood evaluation 107
SCHLICHTING, W. G. Air conditioning in paper industry 197
Schopper gauge 209
Schopper tester A38
Schopper-Riegler tester A39
Scraper for drier P194
Screen P214
Centrifugal P263
Horizontal P54
Cylinder P34
Suction P34
Overflow regulator P83
Pulp P118
Top, of digester P307
Screen plate P34, P263
Screw press P83, P115
Feed arrangement P83
SCRIBNER, B. W. Report of Paper Testing Committee 139
Sea water in papermaking P145
SEBORG, A. M. *See* Ritter, G. J.
Semi-parchment paper P64
Shake mechanism P115
Shaker screen, blower for P307
Sheathing paper P135
Sheet
Breaks, prevention of P117, P214
Heat processing machine P9
Sheet properties, relation to fiber properties 162
Sheet structure, relation to strength 18
Shingle P264, P273
Cutter head 274
Cutting P274
Strip P40
Multicolored P238
Thick-butt P238
Shower pipe P115
SHUBERT, CHARLES A. Deinking waste paper stock 137
Siemens-Harland drive A22
Silica, analysis 289
SIMMONDS, F. A. *See* Ritter, G. J.
SIMONS, F. L. Hydration and freeness 92
Size, mixing with alum P217
Sizing P100, P252
Beater testing 150
Bewoid process A177
Delthirna process A251
Drying, effect of A177
Electropositive fibers A217
Fatty acid salts P74
Fatty acids P134
Glycolic acid of cellulose, use of P217
Hydrogen ion methods in 3
Mechanism A177
Organic acids in P177
Photographic papers A286
Rosin P97
Rubber emulsion in P217
Sodium silicate in A251
Wires, effect on A177
Slice P262, P309
Slime
Cause A216
Control A216
Bibliography A216
Elimination A74, P74
Chlorine in A74
Structure A216
Slitter ..P83, P84, P214, A237, P262, P264, P300
Drive P10
Score-cut P84
Slitter and winder P10
Sliver screen A263
Slivers, defibering P171
Slowness 94
Slowness tester
Comparative tests 267
Green 266
Soap
Alkali process, use in P87
Soft, packing material for P215
Soda process, white pine in A240
Soda pulp
Bleachability test 50
Caustic solutions, action of A240
Recooking, effect of 254
Wood, evaluation of, for A85
Soda recovery A170, A171
Soda-sulphur process, white pine in A240
Sodium acetate from black liquor A285
Sodium manganate in bleaching P177
Sodium peroxide in bleaching P177
Sodium silicate
Cover paper, use in A251
Digester lining, use in A98
Emulsions, use of P135
Sizing, use in A251
Sodium sulphite from black liquor P97
Sodium thiosulphate in bleaching P99
Southern Kraft Corporation A218
Southern pines, papermaking material A148
Spacing members P287
Spear pole P116
Speed reducers A21
Spiral press P83
Springfield Paper Mills A310
Spruce
Chlorine process A169
Fiber length A23
Lignin content and climatic conditions A285
Pulp from, by steaming process A250
White rot A84
Spruce pulp
Chlorine process, ray cell content 123
Pebble mill treatment, effect of 123
Standard Paper Box, Ltd., mill A288
Starch A177
Absorption by pulp, effect of beating 222
Static electricity, cause in paper 197
Steam
Deinking process, consumption in 154
Exhaust A297
Steam accumulator A12, A21, A297
Board mills A21
Steam costs, calculating A297
Steam generator A136, A285, A297
Developments in A22
Steam plant A215
Steam pressures, paper mills A285
Steam traps A215
Steam turbine A11, A12, A21, A136, A215
Steel
Alloy A136
Painting 246
Paper industry, use in A262
Stencil, backing sheet P63
Stencil paper P218
Stencil sheet P64, P133, P134, P237, P275
Stiffness tester 229
Carter 172, A276
Stock
Consistency P300
Deinked, washing 138
Flow deflector P10
Pumping A215
Sterilization P238
Stock conduit P10
Stock inlet P11, P117
Stock outlet P34
Stock pits, removal of pulp from P214
Stock pump A83
Stoker
Automatic A21
Dano A297
Feed A297
Firing A21
Stone plates, artificial P136
Stoneware A22
Straw
Digestion P170
Calcium salts in P175
Nitric acid P175
Preparation A134
Treatment of A176
Strawboard P52
Food containers, use as P287
Strawboard mills, white water in A215
Strength curve 15
Strength properties, effect of beating 19
Strength test, pebble mill 178
STUART, W. H. Paper stiffness tester 229

Stuffing box, lubricating P75
Suction box, lubricating ..P9, P11, P36, A113, P117, P261, A263, P269, P308
Air, removal of P35
Head P10
Suction couch A117
Suction cylinder P118
Suction filter P36
Kamyr A193
Nebrich A193
Oliver A193
Stock, removal of P35
Wolf A193
Suction press roll A213
Suction roll P118, P262, P300, P307, P308
Collar P35
Gearless P309
Mounting P115
Packing P35
Shell
Countersunk P308
Drilling P309
Sugar cane
Cellulose from A85
Papermaking material A145
Sugars, action of sulphite cooking acid A147
Sulphate process, Black liquors, use in P285
Sulphate pulp, ray cells in 119
Sulphite cooking liquors
Analysis 289
Chromium-nickel-iron alloys, action on A136
Concentrated, use of 315
High sulphur dioxide content A249
Lignin, action on A147
Manufacture P147
Manufacture without gas cooler 312
Pre-heating P148
Progress in 30 years 311
Relief liquors in 232
Sugars, action on A147
Waste liquors in 232
Sulphite industry
Corrosion in 143
Progress in 30 years 311
Sulphite mill, Restigouche Co. A24
Sulphite process P148, A168, P168
Bisulphite ion concentration A168
Chemical consumption in, temperature and 189
Chemistry of A147
Cooking acid, strong, in A249
Developments 56, A249, 279, 311
Digester temperature in 188
Fiber length, effect on A147
Forced circulation system 13, A168
Hot acid recovery A168
Hydrogen ion methods in 1
Jensen-Brobeck system 279
Mechanical control A98
Morterud's circulation system A249
Neutral A249
Penetration-boosting pressure in P98
Pine wood in A146
Problems 57
Progress of A147
Pulp yield and temperature 189
Recooking, effect of 254
Relief liquors in cooking acid 232
Rosen A98
Steaming in A250
Swamp black gum 103, A240
Technical control in A148
Temperature, role of A249
Temperature control in A169
Waste liquors in cooking acid 232
Sulphite pulp
Alkaline solutions, effect of A86
Bleachability test 50
Caustic soda, action of A86
Consistency changes 126
Ray cells in 119
Spruce, strength data 165
Sulphite waste liquor, effect on 254
Sulphite waste liquors
Alcohol from A98
Aromatic compounds from P249
Burning in boiler furnace A169
Combustible matter from P99
Oils from P99
Organic matter from P98
Reuse in sulphite process 232
Soda from P98
Sulphite pulp, effect on 254
Sulphur dioxide recovery P98
Wood digestion, use in A146
Sulphur, determination in gasoline 243
Sulphur burner gases, analysis 278
Sulphur dioxide
Absorption P147, A168
Analysis 278, 289
Anhydrous, for digesting wood P98
Cellulose, drying of, with P101
Liquid, for cooking acid A23
Paper, effect on A175
Purification P97
Pyrites, production from ...P97, A168, A249
Recorder A12
Sulphite waste liquor, recovery from .. P98
Sulphur trioxide, analysis of 278
Sulphuric acid
Analysis 277
Vapor pressure 200
SUMMERS, B. S., and CORFIELD, J. D. Chromium-nickel castings in sulphite industry 143
Super-bleaching A177
Svensson chip filler A260
Svensson system 280
Swamp black gum
Analysis 104
Physical characteristics 104
Sulphite process 103, A240
Synchronizing mechanism, adjusting P117

T

Table roll P35, P75, P310
Size of A113
Tearing length, factors affecting A39
Technical control A216, A264
Sulphite process A148
Temperature control
Chemicals for A23
Laboratory 201
Tensile strength 15, 302
Basis weight, variation with 102
Solid fraction of paper and A195
Test sheets 16, 291
British method A194
Canadian method A194
Testing cabinet, constant humidity 199
Testing room, constant humidity 198, 199
Thorne barker A74
Thyle consistency control A11
Time of rotation, pulp 125
Tissue mills, white water in A215
Titration, electrometric A101
Tobacco packages, paper for P133
Toilet paper P273
Rewinding machine P116
Top screen for digester P307
Tractors A21
Training problems, paper industry 140
Transfer material P238
Tintometer, integrating device A99
Trucks A21
Tube rolls P9

U

Unemployment, education and 90

V

Vacuum filters for washing pulp A196
Valves A215
Designs of A196
Hydraulic diaphragm A196
VAN BRUNT, J. Steam pressure and temperature in paper industry 94
Verein der Zellstoff—u. Papier.-Chemiker u. Ingenieure A23
Vickery high-angle doctor A260
Viscose, solubility in sodium hydroxide A146
Viscose process 269
Viscosity
Cellulose A146
Rags, classification of, by 202
Vulcalock process A24
Vulcan fiber A299
Vulcanized fiber P298
Zinc chloride in P298

W

Wallace and Tiernan Co. 160
Wallboard P61, P133, P134, P264, P275
Dextrin in P237
Double-faced P9
Laminated P61
Plastic P40
Wall paper P287
Varnished P237
Washer, vacuum A196
Washing, ray cells, effect on 119
Washington, paper industry in A24
Waste paper
Automatic unit A113
Cutter P215
Deinking 137, P145, A145
Wastes from 142
Wastewater, Purification P310
Water
Artesian well A310
Beating, role in 223
Boiler A22
Solids in A285
Color, removal of A39
Filtration A285
Hydrogen ion concentration, for grinders P171
Paper mill A148
Purification A39, A285
Systems A12
Qualities for paper making A148
Vapor pressure 278
Wood, penetration of A84
Water glass. *See* Sodium silicate.
Water mark, shaded A148
Watermarking apparatus P308
Watermarking plates P213
Waterproof paper, sizing A217
Waterproofing A239
Compositions P63, P238
Millboard P133
Wax, paper sizing with A64
Waxed paper P40, A64, P275
WENNBERG, E. N., and LANDT, G. E. Viscosity and rag evaluation 202
West, C. J. U. S. patents 53, 185
Wet felt P34
Wet machine
Lap folding device P261
Pulp storage from P261
Wet press P214
Arrangement P309
Reversible A263
White birch
Discoloration A145
Red heart, cause of A145
White pine
Composition 128
Soda process 127, A240
Soda-sulphur process 127, A240
White water
Board mills A215
Chlorine, test for A218
Fiber recovery P214
Sampler P35
System for P115
Tank 35
Utilization A35, A74, A114, A215
Wholestuff (book review) 258
Wiener refiner A176
WILLETS, WM. R. Hydrogen ion methods in the paper industry 1
Williams freeness tester A259
Winder P10, P196, P262, P264
Drive, automatic speed regulator A113
Drive control P10
Drive, electric A11
Friction resistance device P262
Guide collar P300
Paper P84
Speed regulator P22
Winding drum P310
Wire P35, P118, P196
Care and upkeep A308
Control of A196
Duo-wear A213
Guide roll P115
Joining P214, P263
Life of A113
Meshes used A11
Paper wrapped P239
Sizing, effect of A177
Soldering P35
Tension, calculation of A213
Wear A11
Wire belt
Seam for P299
Woven P310
Wire drum P263
Wire guide P262, A263, P263
Wire shake P262
Wood
Alkali solubility test A85
Ammonium hydroxide, digestion with . P170
Barking A263
See also Barkers
Calcium hypochlorite, digestion with .. P168
Cyanate, digestion with P174
Cyanide, digestion with P174
Density 71
Disintegrating P86, P250
by water P174
Evaluation for soda pulp A85
Fiber substance density A285
Grinding A171
Growth mechanism A240
Lignin content
Age of the tree and A285
Climatic condition and A285
Measuring apparatus 216
Moisture, determination of A146, 173
Moisture test A145
Nitric acid process A99, P175, P250
Painting 245
Preliminary treatment P98
Preparation, developments in 56
Pre-steaming A98
Research Institute, Eberswalde A23
Resinous, board from P287
Sodium sulphide, digestion with P170
Softening process P250
Sulphur dioxide, anhydrous, for digestion of P98
Thermal value 80
Volatile constituents, removal of P174
Water, penetration of A84
Western, pulp from A146
Wood acid towers A263
Wood fibers, microstructure A85
Wood grinders
Continuous A249, A250
Drives P249
Pocket A249, A250
Wood feed, regulation P249
Wood pulp
Paper, determination in A85
Pitch, determination of 301
Wood waste
Boards from A84
Disintegrating P261
Fuel value A12, 80, A288
Wool, determination in board A276
WRIGHT, J. C. Vocational education and unemployment 90
Writing paper mills, white water in A215

Y

Yankee machine, multiple drive A307
Yellow pine, carbohydrates in A86
Yoshimo paper, stencil sheet from P133
YOUTZ, M. A., and LAUER, B. E. Determination of moisture in wood and lap pulp 173

Z

Zeiss photometer A39
Zinc chloride, manufacture P63